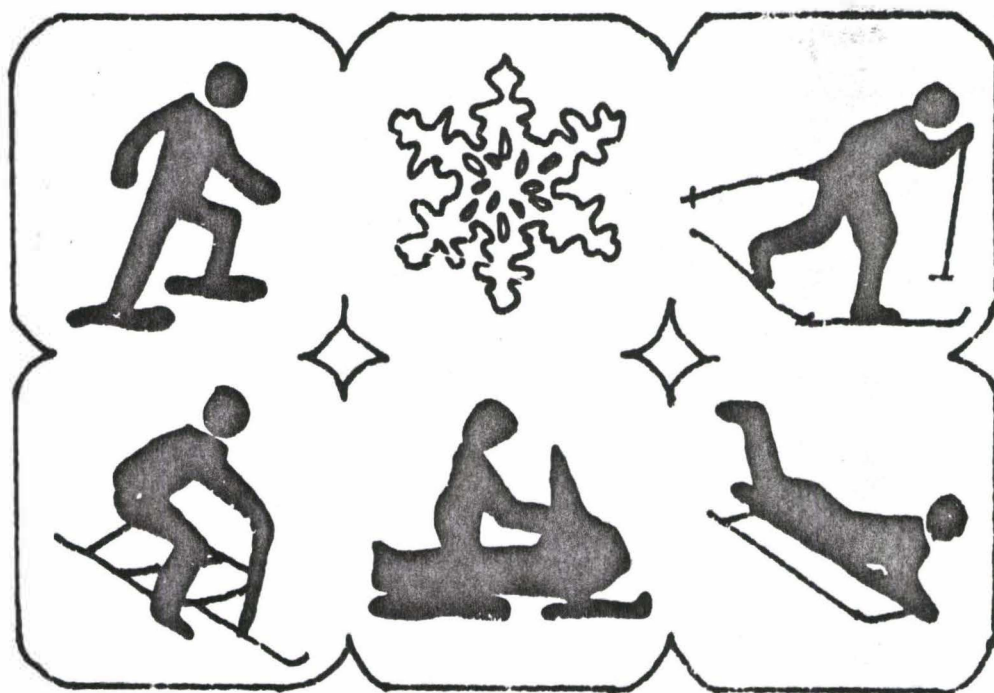


OBTAINING WINTER RECREATION INFORMATION



FOR PROJECT PLANNING

Obtaining Winter Recreation Information
for Project Planning

Submitted to
The Department of Recreation and Park Administration
Clemson University
College of Forest and Recreation Resources
as a Requirement of the
U.S. Forest Service
Outdoor Recreation Management Short Course

by
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Wenatchee, Washington
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ACKNOWLEDGEMENT

I want to thank Roger Clark of the Pacific Northwest Forest and Range Experiment Station for helping me get this project "off the ground".

ABSTRACT

In preparing environmental assessments for proposed resource projects or plans such as timber sales or recreation management plans much information needs to be gathered about the area to be affected. This information is used in evaluating the proposed project and is of importance in its design, layout and management. Included in this information is the recreation resource.

Considerable research has been done in determining behaviors, use patterns, preference and concerns of summer recreationists in both developed and dispersed situations. Little has been done, however, in applying these methods to winter recreationists for the same purposes.

This paper summarizes some of the methods available for gaining information from and about winter recreationists for use in project planning activities such as timber sales or winter recreation management plans. It briefly describes the results of trial application of some of these methods involving a selected study area, which indicated that reasonably good information could be obtained in this manner.

In addition this paper will provide some additional resource data which would be helpful in project assessment.

TABLE OF CONTENTS

PAGE

Introduction	5
Definitions	6
Study Area Description	8
Assessment of Current Recreation Situation	12
Opportunities to Enhance Winter Recreation	20
Overview of Sampling Methods	22
Results of Trial Testing of Some Sampling Methods	26
Summary and Conclusion	31
Recommendations	33
Literature Cited	35
References	36
Appendix 1 - Management Prescriptions	39

LIST OF FIGURES

Figure 1 - Study Area and Swauk Visual Corridor	9
Figure 2 - Hurley-Pork Timber Sale Area	10
Figure 3 - Winter Recreation Opportunities	21

INTRODUCTION

This paper deals with methods of obtaining information from and about dispersed winter recreationists for use in enhancing their opportunities when planning projects such as winter recreation plans or timber sale activities and their related support facilities. It has been developed and written to fulfill requirements of the Clemson University Professional Development Program for Outdoor Recreation Management, 1982, and to aid the Cle Elum Ranger District of the Wenatchee National Forest in its Environmental Assessment development implementation of its timber sale programs, and winter recreation management planning.

In developing this paper, additional information is given which may be useful in the above mentioned program and plan developments.

As the Wenatchee National Forest has developed a Forest Land Management Plan and associated resource inventory, its data and direction is used where appropriate in describing the study area and providing information for developing an Environmental Assessment for the Hurley-Pork Timber Sale which is within the study area. (see Figure 2)

DEFINITIONS

ATV - All Terrain Vehicle.

Analysis Area - Homogenous areas of land formed from physical and biological characteristics which would respond to management in a similar manner.

Management Prescription - A set of management practices selected and scheduled for application on a specific area to attain multiple use and other goals and objectives.

ORV - Off Road Vehicle.

PAOT - Persons At One Time - Recreation measurement term for the number of people in an area or using a facility at one time.

Partial Retention - A Visual Quality Objective where man's activities may be evident but are subordinate to the characteristic landscape.

Recreation Opportunity Spectrum (ROS) - Mixes or combinations of activities, settings, and probable experiences arranged along a continuum.

Recreation Visitor Day (RVD) - A unit for measuring recreation activities which aggregate 12 visitor hours. It may be one person for 12 hours, 12 persons for one hour, or any equivalent combination of continuous or intermittent recreation use by individuals or groups.

Retention - A Visual Quality Objective where mans activities are not evident to the casual Forest visitor.

Roaded Natural Recreation Opportunity Spectrum - Recreation activities occur in an area characterized by predominantly natural appearing environments with moderate evidences of the sights and sounds of man.

SCORP - Statewide Comprehension Outdoor Recreation Plan.

Visual Quality Objective - Desired degree of managing the visual resource based on the acceptable degree of alteration of the characteristic.

Visual Resource - The composite of basic terrain, geologic features, water, features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

STUDY AREA DESCRIPTION

Location

The study area is on the Cle Elum Ranger District of the Wenatchee National Forest in Washington State and is within one to two and one-half hours drive from such major population centers as Seattle-Tacoma, Yakima, and Wenatchee, where populations are 2.1 million, 100,000, and 40,000 respectively. See Figure 1.

The area is traversed by U.S. Highway 97, is known locally as the Swauk Highway and is very scenic in nature. The forest has developed a visual management plan for the entire travel corridor which involves 21,800 acres. The study area lies within that corridor from Swauk Pass to Mineral Springs Resort and covers approximately 11,500 acres. The study area also includes the old U.S. Highway 97 which winds over Blewett Pass. See Figure 2.

Topography

The area physiography is mountainous in nature with elevations ranging from approximately 2,900 feet at Mineral Springs Resort to 4,000 feet on Swauk Pass and 4,064 feet on Blewett Pass.

Forest Plan Analysis Area data indicate the following slope characteristics within the area:

- 13 percent Gentle (0 to 40 percent slopes)
- 76 percent Moderate (40 to 60 percent slopes)
- 11 percent Steep (over 60 percent slopes)



STUDY AREA

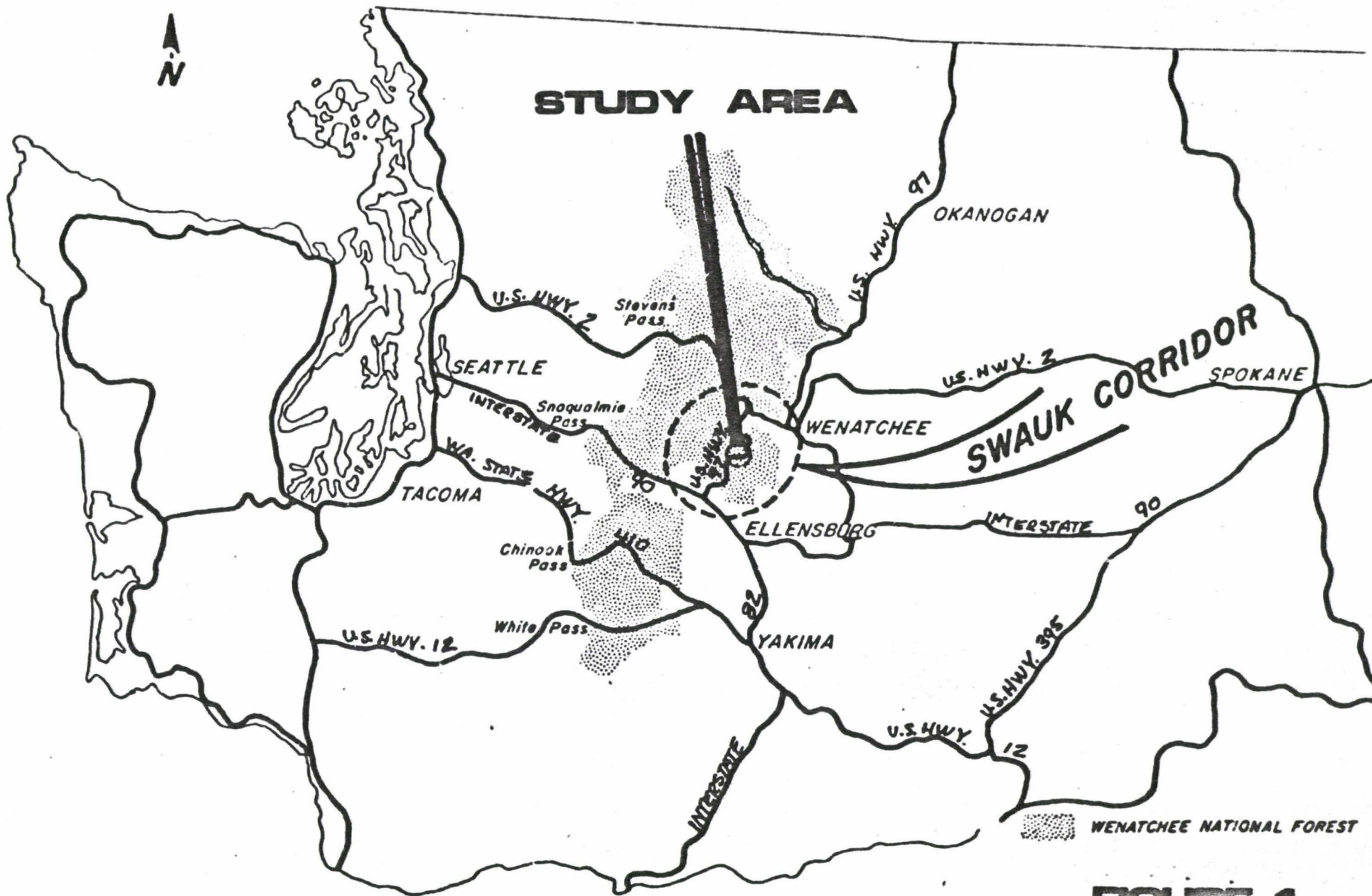
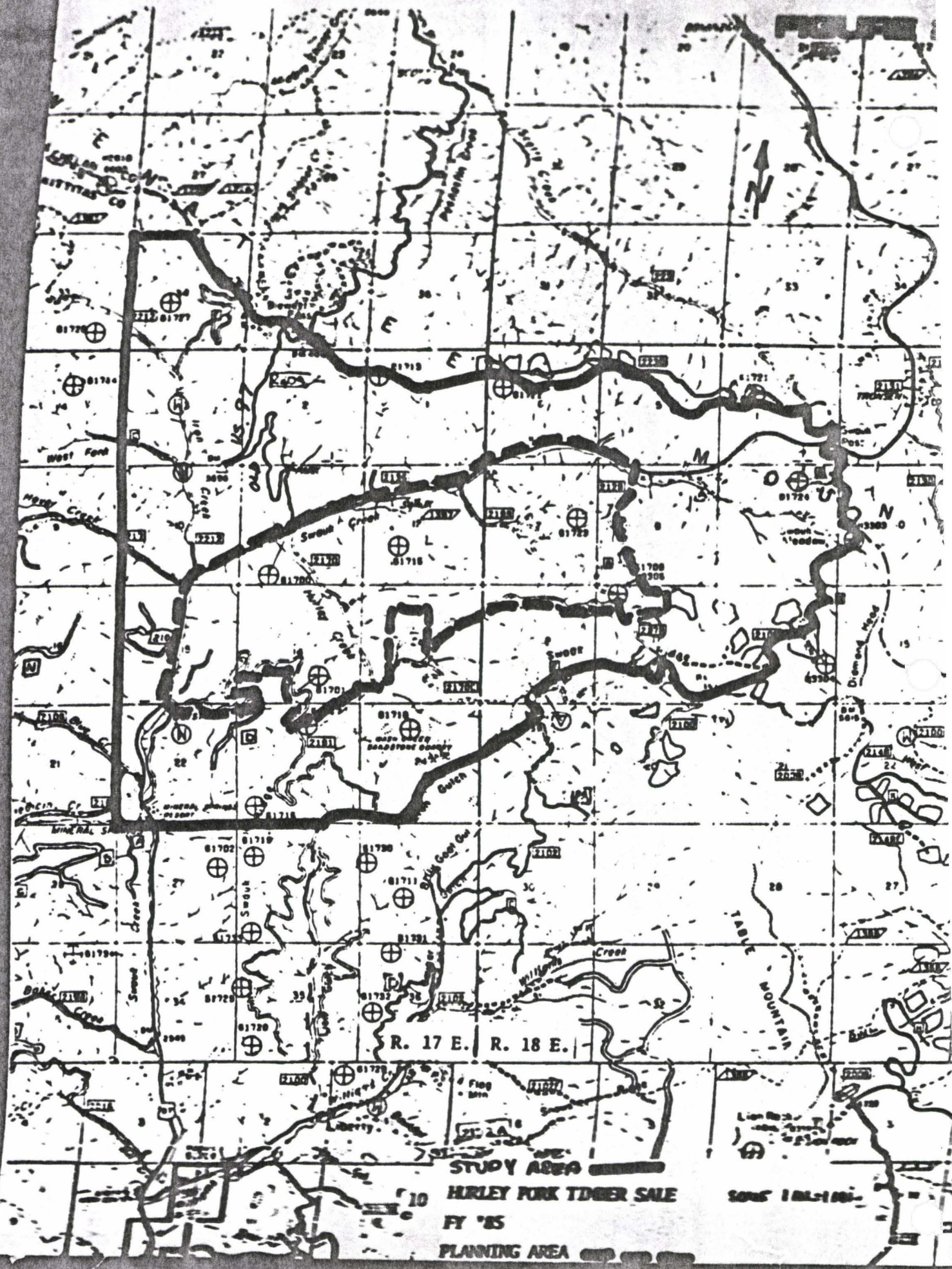


FIGURE 1



Climate

Average annual precipitation is 24 inches of which about 60 percent is in the form of snow. Snow depths may reach two feet at Mineral Springs and four to four and one-half feet on Swauk Pass.

The usable season for snow activities runs from late December or early January through mid-March.

Vegetation

The area supports varying-aged mixed species stands of Douglas-fir, white pine, lodgepole pine, larch and ponderosa pine. Eighty-nine percent of the area contains commercial forest lands. The area in general has been managed for timber resources for several years and contains a road network developed for that purpose.

Wildlife

No key big game winter range is within the area. Winter wildlife found would be snowshoe hare, mink, marten and the northern three-toed woodpecker.

The next section will discuss the current recreation situation.

Public Issues and Management Concerns

The forest planning process developed a list of public issues and management concerns involving all resources.

Although none of the issues on this list deal with a specific site such as the Swauk Corridor area, there are some related to both recreation opportunities and user conflicts. The ability of the forest to resolve these issues in addition to visual factors which are generally recreation related is also of concern.

Some of the specific recreation issue facets are:

1. Minimization of user conflicts (i.e. motorized versus non-motorized)
2. Management of roads and trails for recreation use.
3. Identification and management of suitable areas for ORV's, snowmobiling, ski touring and other forms of dispersed recreation.
4. Protection and safety of the forest recreation user.

Visual management issue facets are:

1. Location of the key or unique visual resources of the forest and decisions on how they should be managed?
2. Use of silvicultural systems (clearcut, thinning, etc.) and timber sale designs that are visually acceptable.

The Swauk Corridor's visual resource was a concern to management prior to the Forest Plan development which resulted in the Swauk Visual Corridor Plan mentioned earlier. In addition, there is a management concern for the possible enhancement of cross-country ski opportunities in the Hurley-Pork Sale area vicinity.

Current and Proposed Management Direction

The entire study area is presently being managed as multiple use with emphasis on visual quality. Guidance is also given in the Swauk Plan referenced above in managing the area under the Retention and Partial Retention Visual Quality Objectives.

The proposed Forest Plan reiterates the current direction and provides two management prescriptions for application on the area which also emphasize visual quality. (See Appendix A)

Setting

The study area is classed as having a Roaded Natural Opportunity Setting under the Recreation Opportunity Spectrum (ROS) classification using summer criteria. No specific guidance has been given for classifying lands for ROS under winter conditions. It will be assumed this same classification holds for the winter season even though the roads are snow covered.

Capacities

The Forest Plan has developed a maximum per acre summer dispersed recreation capacity output of 25 Recreation Visitor Days (RVD's) per acre per year (season) for all acres as a whole in the Roaded Natural ROS class. This is premised on the assumption that a person on foot can be dispersed virtually anywhere under summer conditions even given most slope factors. As winter use in this area is essentially confined to the road or trail facilities only (assumes users are limited by the abilities of their equipment), the following possible winter output capacities are offered using the publication titled "Guidelines for Understanding and Determining Optimum Recreation Carrying Capacity," (author(s) and date unknown). This publication suggests a maximum of 16 vehicles per mile for trail bikes which is also being assumed here to be the same for snowmobiles. This equates to one vehicle every 330 feet if evenly spaced. The maximum output in terms of RVD's per acre per season would then be calculated as follows:*

16 machines/mile with a potential 2 persons per machine = 32 persons/mile.

Road width of 30 feet equates to 3.6 acres per mile. Average winter season is 90 days. Weekday:weekend patterns of use estimated at 1:8, or a factor of .37 (FSH 1909.12). Average length of time in activity is six hours.

*Some of the data being used is a result of test sampling the users.

Given the above and the following formula from Forest Service Handbook

1909.12 Recreation Planning Handbook, chapter 500:

$$\text{RVD} = \frac{\text{PAOT} \times \text{MS} \times \text{PU} \times \text{LSO}/12}{\text{Acres Involved}} = \text{RVD/A/Season}$$

Where: RVD = Recreation Visitor Day

PAOT = Persons At One Time

MS = Managed Season

PU = Pattern of Use - ratio of weekday to weekend use

LOS = Length Of Stay - amount of time spent in activity in
one 24 hour day

The potential maximum per acre capacity output would be:

$$\frac{32 \times 90 \times .37 \times 6/12}{3.6} = 148 \text{ RVD's/Acre/Year}$$

The publication suggests a maximum of three and one-half groups per mile for cross-country skiers which have an average group size of four, or 14 persons per mile and spend an average of four hours in activity per visit. Using the other data and formula as above, the maximum potential output capacity would be 43 RVD's/Acre/Year.

This gives an output if the facilities are segregated by use. Since all facilities are currently open to use, and the use is shared equally by both types, it is suggested the weighted average of the output be used which is:

Snowmobiles 148 @ 50 percent = 74 RVD/A/Yr

Skiers 43 @ 50 percent = 22 RVD/A/Yr

Weighted average = 96 RVD's/Acre/Year

As the study area currently has 36 miles of road (not including Highway 97) available for winter activity use, this would be 129.6 acres or a potential to produce 12,442 RVD's/Year.

The Cle Elum District estimates current use at about 3,500 RVD's which indicates there are ample facilities to accomodate further demand based upon the above calculation assumptions.

If further studies show the use is concentrated on a small area which is exceeding capacity, a need for better dispersion of users would be indicated.

Demand

Winter recreation and the demand for areas and facilities for its opportunities and enjoyment have grown substantially over the past few years. A check with local dealers in both snowmobiles and cross-country ski equipment indicated the demand is steady in spite of the recent national economic problems.

The Forest Plan demand analysis was based upon the Statewide Comprehensive Outdoor Recreation Plan (SCORP) which predicted both uses would increase by 21 percent from 1980 to 1990 and 13 percent from 1990 to 2000. It was further estimated on population growth projections that these uses could grow at seven percent, ten percent, and seven percent respectively each decade through 2030. Given the estimated potential and projecting the current use by the above percentages indicates the area has more than adequate capacity to meet this demand through the Forest Plan's 50 year horizon.

Facilities

Parking:

The Washington State Highway Department provides for and maintains winter parking facilities through funds derived from Sno-Park permits, snowmobile registration and fuel taxes. Currently there is only one facility located on both sides of Swauk Pass with a capacity of about 25 car type vehicles. This site is prone to overcrowding on weekends. The entrance to the Swauk Campground, which is about three and onehalf miles west of Swauk Pass, is also kept plowed out but is not officially listed as a Sno-Park. It can handle four to six vehicles.

Designated Trails

As stated earlier, there are approximately 36 miles (58 kilometers) of existing road in the area in addition to about one and one-fourth miles (two kilometers) of actual cross-country ski trail.

Directions to both are signed at the take-off points from the Sno-Park. Of the road miles given above, about 11 (18 km) are designated as "more difficult". The remainder plus the trails are classed as "Beginner" according to a guide map published by a local group of cross-country skiers. There are no "most difficult" routes listed in the area. The snowmobile trails are groomed about twice per year.

Activities and Use Patterns

Snowplay is taking place adjacent to the Sno-Park on the southside of Swauk Pass which includes sledding, tubing and even running three wheeled All Terrain Vehicles (ATV's) when snowpack permits. Although both uses take place on the area as a whole, snowmobiling occurs mainly on the south and east side of the pass. There are more roads and open country here in which to operate, such as Table Mountain. Cross-country skiing occurs mostly on the north and west side of the pass where the Wenatchee Ridge Road (Leavenworth Ranger District) is heavily used for both individual use and for training schools for beginners. Some skiers do depart on the south and east side but head for trails on meadows to the north. Snowshoers occasionally use the area and some have indicated good opportunities in the Blewett Pass road vicinity on old wagon and spur roads. Some snowmobilers plan their trips to be at the Mineral Springs restaurant as a mid-trip rest and dining stop.

Sanitation

Toilet facilities are provided and maintained at the take-off points on either side of Swauk Pass adjacent to the Sno-Parks.

Additional toilet facilities are available in the Swauk Pass adjacent to the Swauk Campground (one must provide his own access) and at a private resort-restaurant at Mineral Springs.

Economics

The monies expended on facilities and their maintenance are all derived from the sources discussed under parking. The Forest Service receives these funds for providing and maintaining the sanitary facilities with maintenance being by contract at about \$900 per season. Trail grooming is also financed from these funds and costs about \$12 per mile.

The Highway Department expends from \$2,000 to \$2,500 per season in keeping the Sno-Park and other spaces plowed.

Some ski trail clearings have been done by volunteers for \$600 per mile.

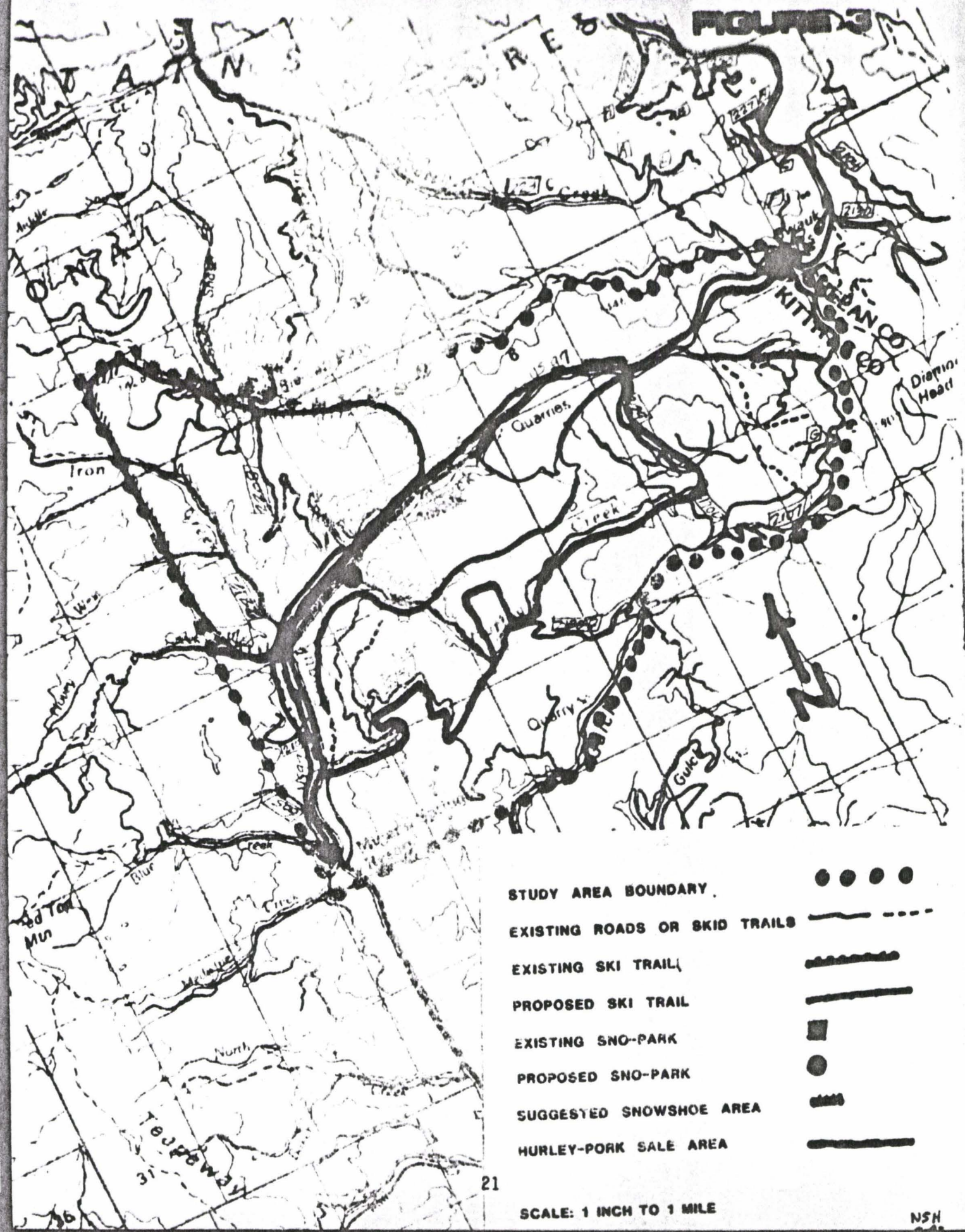
The next section will discuss opportunities to enhance winter recreation in the area.

OPPORTUNITIES TO ENHANCE WINTER RECREATION

Although the study area currently has several roads and trails being used, there is an opportunity to take better advantage of some existing facilities. Development of new ones could better distribute the users and provide greater variety to their experiences. In addition this area and any added facilities could aid in alleviating some of the overcrowding presently occurring within the Interstate 90 corridor which is about one and one-half hours from here. This area could be advertised as a good alternate for the Interstate 90 area.

Figure 3 shows some possible routes for enhancing cross-country skiing and additional Sno-Park sites which would provide new take-off points for snowmobilers and relieve some of the crowding on Swauk Pass. The Blue Creek road also offers an excellent opportunity for beginners and for training schools. Portions of these routes could be provided through timber sale access design and some open play areas could be made available through small clearcuts on gentle to moderate slopes which are given reasonably good slash clean-up during site preparation. Figure 3 also indicates the recommended snowshoe area.

To get a better feeling of public winter use patterns in the area and what the recreating winter user might like to see or not see, the next section offers some sampling methods that could be used in obtaining information for project and plan preparation.



STUDY AREA BOUNDARY

EXISTING ROADS OR SKID TRAILS

EXISTING SKI TRAIL

PROPOSED SKI TRAIL

EXISTING SNO-PARK

PROPOSED SNO-PARK

SUGGESTED SNOWSHOE AREA

HURLEY-PORK SALE AREA

SCALE: 1 INCH TO 1 MILE

OVERVIEW OF SAMPLING METHODS

There is a multitude of literature on sampling recreationists but much of it is geared toward summer user patterns and behavior in campgrounds, dispersed roaded areas and wilderness. Literature was not available for dispersed winter use other than a study sampling cross-country skiers and snowmobilers as to their concerns about each other.

However, most of the sampling methods applied for summer use are appropriate for winter users as they are all recreationists regardless of season and it is assumed their environmental concerns are much the same when it comes to the settings they seek and prefer.

One quick way of obtaining an idea of distribution patterns is to select clear, busy days on the area and take aerial snapshots. This might be done cooperatively should the State Department of Fish and Game pass over the area between winter game surveys. Other photographic means used on the ground during summer months such as time lapse or remote triggered camera along roads or trails would probably not work well under winter conditions.

There are other approaches which I call direct and indirect.

The direct approach involves actual observation and participation which is designed to maximize contact with the situation. Social interactions, behavior patterns, group sizes, age distribution, setting desires, and other factors are studied.

The person participating can be one of four things. (Campbell, 1970)

1. Complete participant, which involves keeping one's true identity from the subjects under investigation.
2. Participant as observer, in which the investigator plays the role of the particular recreationist but reveals his true identity to the subjects.
3. Observer as participant, where the investigator gets involved with the subjects but focuses only on those activities of his particular interest.
4. Complete observer, which fully removes the investigator from interaction with his subjects.

Each of the four has its advantages and disadvantages and degree of reliability but offers ways of gaining information first hand and on-site. The first three are basically researcher oriented but can be used by district personnel who may best fit the role.

No specific cost of these research methods was given. Cost would be a factor of whether done on a volunteer basis or not. Basic costs would be for time to develop a documenting system for vehicle travel, investigator wages, clerical and analysis time.

A further reference would be "Using Observation to Collect Resource Management and Research Information - A Self Training Package" by Recreation Research Project, USDA Forest Service, Pacific Northwest Forest and Range Experiment Station, Seattle, Washington 98105.

The off-site interview can be used to obtain "overview" type information from individuals or groups who represent the recreation activity and use the sites or areas in question. This can be done formally or informally. Formally would be a one-on-one or one-to-group prearranged meeting to discuss given topics. Informally would be much like networking where information is gained in a casual manner. Both do require pre-knowledge of what information is being sought. Costs involved may generally be minimal as these methods can take place as part of normal office operation such as meeting with community leaders and forest users or participating in local organization meetings.

The indirect method is basically the mail or handout questionnaire which can be used to gather a multitude of information. Here the subjects under study can be asked to report the desired information to the investigator in which the subjects are required to "observe" their own behavior, characteristics or feelings about what they do or events that occur around them. (Clark, 1977) The questionnaire may also be employed as part of formal on or off-site interview. Costs involved can run relatively high as there is preparation, printing, mailing, and analysis time. Analysis time can be reduced considerably if the questionnaire format is computer oriented.

If more than nine questionnaires are used in such a study, approval must be obtained from the Office of Management and Budget, under the Privacy Act.

The next section discusses the brief use of some of these methods and summarizes the results.

RESULTS OF TRIAL TESTING OF SOME SAMPLING METHODS

The author conducted a brief informal interview with both snowmobilers and cross-country skiers on site at the Sno-Park on Swauk Pass. He also played the role of complete observer in the process.

Some questions asked were:

- What brings you here?
- How many in your party?
- How long do you stay?
- Where are you from?

The author also discussed possibilities of enhancement of recreation opportunities through Forest Service timber sale activities and the need for parking and sanitary facilities. In addition, he conducted a formal interview with a prominent local sporting goods businessman who is an expert on cross-country skiing and has a special use permit to conduct classes on the Wenatchee Ridge Road (on the Leavenworth District).

The following is a capsulization of my findings:

- All users interviewed were attracted to the area due to its good snow conditions, availability of facilities (sanitary, parking, trails) and variety of route choices and its relative visual attractiveness.

- Users come from all the population areas mentioned earlier - Seattle-Tacoma area, Wenatchee, Ellensburg, and Yakima.
- They noted that week-end use was heavy - weekday use was light.
- All saw a need for additional snow parking and agreed that the Hurley Creek location would be a good choice.

Snowmobiler information noted:

- Users are family oriented (multi-aged) and travel in groups as large as 25-30. Average party size is six.
- They are tolerant of cross-country skiers and feel little hostility toward or from them.
- Some enjoy night riding over day riding.
- They generally remain overnight due to cost of getting to the area and hauling equipment.
- They generally go to the Table Mountain vicinity.
- Some like planning a stop at Mineral Springs as part of their trip.

- Encounters with other snowmobilers ranged from 3 to 12 (one estimated he saw over 100 people during his run in the area).
- One user met 10 cross-country skiers on the main snowmobile route.
- Another counted 23 cross-country skiers departing from the south side of Swauk Pass.
- Most have traveled all the trails in the area from time to time.

The following suggestions about the Sno-Park were made by the snowmobilers:

1. All users felt the area needed enlarging.
 2. One group suggested designing in a pull-through pattern as it is very difficult to get vehicles turned around.
 3. A suggestion was made to cast the snow to the uphill (east side) to allow viewing of children using snow play area on the west side. As it is now done, the berm obstructs the view. Also suggested was closing the snow play area to snowmobiles. (They could be used to pack the area down, however. Author's Note)
- Most feel controls on use are not needed.
 - Most did not object to Forest Service timber management practices if those in the area are an example.

Cross-country skiers had these comments:

- They prefer to avoid snowmobilers where possible but do tolerate them generally. Packing of track by snowmobiles has good and bad points. Safety is a concern when encountering snowmobiles. Noise and odor are objectionable to some.
- One indicated that some places in Colorado both skiers and snowmobilers use the same trail (Road) each keeping to their own side. It found that this was also being done in Oregon by using rope to divide the routes for very short distances until each enters a route specifically designated for them.
- Groups averaging four people travel together and are family oriented.
- Some users suggested that some trails (e.g. Wenatchee Ridge Road) be signed as "Recommended" for cross-country skiing rather than being closed to one or other use.
- The skiers prefer loops. A good average daily trip is eight or nine miles with a stay of about four hours.
- They are basically road skiers in this area. One must be very knowledgeable of technique to be a true "trail skier."
- Some recommend that where trails are shared, snowmobilers be asked to travel in straight lines rather than zig-zagging.

- They would like to see clearcuts cleaner for safer use for off-trail side trips.
- One user felt the proposed trails on the north side of Highway 97 may be too close to the highway - Favored routes were on the south side within Hurley Park Sale proposal.

Some observations made were:

- Sno-Park was full. North side was basically skiers; south side was snowmobilers.
- Three motor homes with snowmobile trailers, six pickup campers with snowmobile trailers, one camper trailer with pickup, four pickups with snowmobile trailers, three without were in the Sno-Park.
- Seventeen skier cars were on the north side.
- A good snow play area to the west of the Sno-Park was being used for sledding and tubing. A three wheel ATV was being used.
- All vehicles were from Washington State.

Other Information Found:

The Boy Scouts have an annual winter camp out in Swauk Meadows.

The Swauk Campground is sometimes used as a training base for search and rescue operations.

SUMMARY AND CONCLUSION

In general it was found that the area is popular with winter recreationists and appears to have the capacity to receive more use with better parking accommodations and more user distribution. These could be provided by good timber sale layout, design and access routes. Response from users was positive for the route within the Hurley-Pork Sale Area. The users do not object to timber management practices in this area.

It is concluded that good thorough research methods applied over time will give much better statistical results and are needed for better data on winter recreationists. Some of these methods used on a smaller scale, however, can reveal reasonably good information for guiding resource managers in their project and other plan development processes.

In light of tight budgets, personnel ceilings and other resource priorities, such methods can be employed at reasonable cost.

Some of the methods discussed here would be most appropriate to use during the I-90 Corridor Winter Recreation Plan study.

In addition, some of the findings should also be helpful in guiding the approach to the I-90 Corridor study.

One basic thought to keep in mind is that these methods are designed to obtain the various user's preferences, and thereby should help avoid the need for management regulation by allowing the users to regulate themselves as much as possible.

It is also felt that additional work is needed to guide development of winter condition ROS mapping and capacity determination.

RECOMMENDATIONS

It is recommended to consider providing the proposed cross-country ski trail through the Hurley-Park Sale Area by locating roads or skid trails along the proposed route if at all possible. This trail, if completed, should be signed as recommended for cross-country skiers only.

This particular recommendation should be implemented as this trail addition would:

1. Add several loop opportunities which are an expressed desire by the skiing user.
2. Provide a route with high scenic value as it would pass by unique rock outcroppings and spires.
3. Provide a route which is not immediately adjacent to the Swauk Highway, therefore giving a sense of isolation.
4. Greatly enhance the skiing opportunities on the south side of the Swauk Highway.

It is also recommended that the Highway Department be notified of the need for a Sno-Park site as indicated near the Hurley Creek Road junction with Highway 97. This could be constructed for relief of crowding on Swauk Pass and to provide better dispersion of winter users.

The Highway Department should be notified of some of the comments concerning Sno-Park design. These include the plowing recommendations for the location on the south side of Swauk Pass and signing the snow play area west of the Sno-Park as restricted from machine use.

When signing trails for skiers, they prefer distances indicated in Kilometers.

It's also recommended that researchers strongly consider a formal long-range study of dispersed winter users as has been done with dispersed roaded recreationists.

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PRESCRIPTION: ST-1EMPHASIS: Scenic Travel - RetentionGOAL STATEMENT: To retain or enhance the viewing and recreation experiences along scenic travel routes.

DESCRIPTION: Within this allocation development and permitted uses in foreground retention and middleground retention areas viewed from recreation sites, roads, and trails will meet the "Retention" Visual Quality Objective. Proposed uses within the allocation will be integrated with the natural landscape. The natural landscape character will dominate the seen area. Developments and management activities will remain visually subordinate to the characteristic landscape.

RMH CHAP.	RESOURCE ELEMENT	RMH MANAGEMENT ACTIVITY	GUIDELINES	ACTIVITY STATEMENT
2.41	RECREATION	Visual Resource Inventory and Planning (A03)	1. Visual Quality Objective: RETENTION	<ol style="list-style-type: none"> Buildings shall exhibit natural harmonious colors. Provide a diversity of vegetative species and age classes. Revegetate cut and fill slopes to the extent compatible with the surrounding area. Utility right-of-way clearings are to conform with the natural vegetative pattern. Overhead utility lines are to be screened where possible, seen transmission towers will exhibit naturally harmonious colors. Retain 15 trees (24"-36" d.b.h.) per acre of ponderosa pine, larch and mixed conifers to age 40+. Cutting units must not expose more than 3% of the seen area within one decade or exceed 15% of the foreground at any one time. Cutting units must not expose more than 5% of the seen area within one decade or exceed 20% of the middleground at any one time. Cutting units must not dominate natural patterns of form, line, color and texture.

10. Landings are to be located outside of seen areas or rehabilitated after timber sales.
11. Gravel, borrow and stockpile areas are to be excluded from the seen area or be rehabilitated after use.
12. Roads must not dominate natural patterns of form, line, color, texture within clearcut areas one year after cutting.
13. Landscape design is to accommodate intersections of arterial and collector roads.
14. Fire protection measures shall not dominate natural patterns of form, line, color, and texture.
15. Landscape architectural input is required when planning an activity or constructing improvements.

Visual Resource Improvement (A04)

1. Rehabilitation measures are to be applied to the landscape where needed to improve the visual setting.

Dispersed Recreation (A14)

1. Manage road corridors in a Semi-Primitive to Modern Urban Recreation Opportunity Spectrum.
2. Manage trail corridors in a Semi-Primitive Motorized and/or Non-Motorized Recreation Opportunity Spectrum.

Recreation Management (A16)

1. Issue permits when compatible with the goal.

2.43 WILDLIFE AND FISH

Wildlife Habitat
Maintenance (C09)

1. Regulate man's activity where necessary to prevent habitat degradation and wildlife harassment.
2. Develop openings or vistas where wildlife can be viewed in their natural habitat by the public.
3. Maintain essential habitat for beavers.

2.44 RANGE

Range Resources Management
Planning (D02)

1. Grazing of suitable range by domestic livestock shall emphasize range management practices that are compatible with scenic travel corridors.
2. Management of the range resource under this prescription will feature an extensive (Level C) scheme of management.

1. Level C Management - Management seeks full utilization of forage allocated to livestock. Cost effective management systems and techniques including fences and water developments are designed and applied to obtain relatively uniform livestock distribution and use of forage, and to maintain plant vigor.

Range Forage Improvement
(D03)

1. Use only native species in range forage improvement projects.

2.45 TIMBER

Silvicultural Examination
and Prescription (E03)

1. Make examinations prior to any activity and as required for certification of reforestation and thinning.

1. Stand examination.

Reforestation (E04)

1. Use reforestation methods compatible with the goal.

1. Plant all nonstocked areas following regeneration harvest. Use genetically superior stock as available. Interplant where needed. Use species suitable for long rotations (pine, larch, Douglas-fir).
2. Perform site preparation as compatible with the goal.
3. Protect seedlings from animal damage.

Timber Stand Improvement
(E05)

1. Use improvement methods compatible with the goal.

- ST-1, 4 of 6, 6/10/00
1. Precommercially thin at 80% and stand density determined from the appropriate special yield table and stocking level curve.

Sale Preparation (E06)
and
Timber Harvest Administration (E07)

Regeneration Harvest -

1. Use shelterwood and small patchcuts subject to standards in Regional Plan, NFM Regulations and visual quality objectives.

1. Seed cut mixed conifers at approximately age 130. Final harvest at age 260. Cuttings are subject to the visual guidelines in Appendix A of the prescription.
2. Shelterwood cut or Patchcut using appropriate Special Yield Table.

Intermediate Harvest -

1. Harvest at intervals called for in the special yield table. Favor trees which will develop old growth characteristics.
2. Salvage as compatible with the goal.

1. Commercial thinning sales.

Logging Systems -

1. Use the most economical methods which are compatible with landform, soil and water quality standards and visual resource objectives.

1. Salvage Sales.

Nursery Management (E08)

1. Collect seed in sufficient quantities to meet program reforestation needs and a sufficient reserve for fire and other natural disasters.

1. Cone collection.
2. Seed certification.

Genetic Tree Improvement (E09)

1. Implement the Forest Tree Improvement Program.

1. Select and maintain superior trees.
2. Seed collection from superior trees.

Water Resource Monitoring
(F03)

1. Silviculture activities shall consider those practices set down in the Best Management Practices Guidelines to reduce erosion and maintain water quality standards.

2.47	MINERAL & GEOLOGY	Mining Law Administration (G01)	<ol style="list-style-type: none"> 1. Withdrawals will be used only when necessary to meet the goal of the prescription. 2. Develop mitigation alternatives during the operating plan approval phase for nonwithdrawn areas.
		Mineral Leasing (G02-G04)	<ol style="list-style-type: none"> 1. Use standard and special stipulations in leasing actions adequate to protect resources.
		Mineral Materials (G07)	<ol style="list-style-type: none"> 1. Allow mineral material sites when compatible with the goal.
		Mineral Character, Withdrawals (G10)	<ol style="list-style-type: none"> 1. Initiate withdrawal within the corridor when compatible with the goal.
2.48	HUMAN & COMMUNITY DEVELOPMENT	No Special Practices.	
2.51	LANDS	Special Use Management Non-Rec (J01)	<ol style="list-style-type: none"> 1. Issue permits for compatible uses only. 2. Terminate or conform noncompatible uses on an opportunity basis.
		Rights-of-Way Grants for Roads and Trails (J02)	<ol style="list-style-type: none"> 1. Grant requests when necessary.
		Federal Energy Regulatory Commission Licenses & Permits (J03)	<ol style="list-style-type: none"> 1. Recommend permits be issued for compatible uses.
		Property Boundary Location and Maintenance (J06, J07)	<ol style="list-style-type: none"> 1. Survey, mark and post all National Forest property lines.
		Land Ownership Planning/ Land Classification (J11)	<ol style="list-style-type: none"> 1. Make needed land adjustments.
		Land Exchange (J13) Land Acquisition (J15)	<ol style="list-style-type: none"> 1. Use either land exchange or land acquisition to acquire other ownerships as needed.
		Rights-of-Way Acquisition (J18)	<ol style="list-style-type: none"> 1. Acquire necessary road, trail, etc., rights-of-way.

		Rights-of-Way - Cost Share Agreements (J19)	1. Where applicable, use cost-share process to identify road location and standards compatible with the goal.
2.52	SOILS	Soil Resource Improvement (K05)	1. Rehabilitate degraded sites.
		Soil Resource Improvement Maintenance (K06)	1. Provide maintenance as needed.
2.53	FACILITIES	Local Road Construction (L12)	1. Follow guidelines in FSH 2309.16 Chapter 4 "Reducing the Visual Impact of Roads."
2.54	PROTECTION	Fire Prevention (P02)	1. Utilize a high intensity prevention effort.
		Fire Suppression (P08-P09)	1. Utilize suppression strategies and tactics to meet visual objectives and minimize damage to landscapes. 2. Use the "Control" Fire Management strategy.
		Treatment of Activity Fuels (P11)	1. Treat fuels by rearrangement, burning in place, and/or utilization off site. Where appropriate, utilize fire intensity level to meet activity objectives.
		Treatment of Natural Fuels (P12)	1. Natural fuel treatment is appropriate.
		Fuelbreak Construction (P13)	1. Compatible fuelbreaks are appropriate.
		Vegetation Treated by Burning (P15)	1. Use prescribed fire where appropriate. Low intensity fire is preferred.
		Insect and Disease Management - Suppression (P35)	1. Suppress insects and diseases when outbreaks threaten managed resources and/or users. Use Integrated Pest Management (IPM) to select suppression strategies.
		Insect and Disease Management - Prevention (P39)	1. Utilize IPM strategies to prevent unacceptable pest damage and meet resource objectives.

DESCRIPTION: SI-3SCENIC TRAVEL - Partial Retention

STATEMENT: Provide a natural appearing foreground and middleground along scenic travel routes.

DESCRIPTION: Development and permitted uses will meet the "Partial Retention" Visual Quality Objective in the foreground and middleground. The proposed uses within the allocations will be integrated with the natural landscape so that activities are visually subordinate. The natural landscape character will dominate the foreground. Year-round uses are permitted where compatible.

VIEW CLASS.	RESOURCE ELEMENT	MANAGEMENT ACTIVITY	GUIDELINES	ACTIVITY STATEMENT
2-4-1	RECREATION	Visual Resource Inventory and Planning (W03)	1. Visual Quality Objective: PARTIAL RETENTION	<ol style="list-style-type: none"> 1. Retain at least 6 trees per acre of 24"-30" d.b.h.; ponderosa pine and larch trees to age 100. 2. Retain at least 14 mixed conifer trees per acre of 24"-28" d.b.h. to age 100. 3. Cutting units must not expose more than 5% of the seen area within one decade, or exceed 20% of the foreground at any one time. 4. Cutting units must not expose more than 7.5% of the seen area within one decade, or exceed 25% of the foreground at any one time. 5. Cutting units must not dominate natural patterns of form, line, color, or texture. 6. Provide a diversity of vegetative species and age classes. 7. Revegetate cut and fill slopes to an extent compatible with the surrounding area. 8. Utility right-of-way clearing shall conform with the natural vegetative pattern. 9. Screen overhead utility lines where possible; visible transmission towers will exhibit naturally harmonious colors.

10. Buildings shall exhibit natural harmonious colors.
11. Landings are to be located outside of seen areas or rehabilitated after timber sale.
12. Gravel, borrow and stockpile areas are to be excluded from seen area or rehabilitated after use.
13. Roads must not dominate natural patterns of form, line, color and texture within cleared areas after cutting.
14. Landscape design is to accompany intersections of arterial and collection roads.
15. Fire protection measures must not dominate natural patterns of form, color, and texture.
16. Managed fire may be used to enhance visual resources.
17. Landscape architectural input is required on all planned activities and developments.

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| Visual Resource Improvement (A04) | <ol style="list-style-type: none"> 1. Rehabilitation measures are to be applied to landscapes where needed to improve the visual setting. |
| Dispersed Recreation (A14) | <ol style="list-style-type: none"> 1. Manage the corridor in a Roaded Natural Recreation Opportunity Spectrum along roads. 2. Manage trail corridors in a Semi-Primitive Motorized and/or Non-Motorized Recreation Opportunity Spectrum. |
| Recreation Management (A16) | <ol style="list-style-type: none"> 1. Issue permits when compatible with the goal. |

2.43	WILDLIFE AND FISH	Wildlife Habitat Maintenance (C09)	<ol style="list-style-type: none"> 1. Regulate man's activity where necessary to prevent habitat degradation and wildlife harassment. 2. Develop openings or vistas where wildlife can be viewed in their natural habitat by the public. 3. Maintain essential habitat for beaver. 	
2.44	RANGE	Range Resources Management Planning (D02)	<ol style="list-style-type: none"> 1. Grazing of suitable range by domestic livestock shall emphasize range management practices that favor scenic travel corridors. 2. Management of the range resource under this prescription will feature an extensive (Level D) scheme of management. 	<ol style="list-style-type: none"> 1. Level D Management - Management seeks to optimize production and utilization of forage allocated to livestock use consistent with maintaining the environment and providing for multiple use of the range. Practices may be selected and used to develop cost-effective methods for achieving improved forage supplies and uniform livestock distribution and forage use. Cultural practices such as brush control, type conversion, fertilization, site preparation, and seeding of improved forage species may be used to improve quality and quantity of forage. Cultural practices may be combined with fencing and water developments to implement complex grazing systems.
		Range Forage Improvement (D03)	<ol style="list-style-type: none"> 1. Use only native species in range forage improvement projects. 	
2.45	TIMBER	Silvicultural Examination and Prescription (E03)	<ol style="list-style-type: none"> 1. Make examinations prior to any activity and as required for certification of reforestation and thinning. 	<ol style="list-style-type: none"> 1. Stand examination.

Reforestation (E04)

1. Use reforestation methods compatible with the goal.

- SI-3, 4 of 7, 27-5-88
1. Plant all nonstocked areas following regeneration harvest. Use genetically superior stock as available.
 2. Perform site preparation as compatible with goal.
 3. Protect seedlings from animal damage.

Timber Stand Improvement (E05)

1. Use stand improvement methods compatible with the goal.

1. Precommercially thin at densities and stand density determined from the appropriate special yield table and stocking level curves.

Timber Sale Preparation (E06) Regeneration Harvest -
and
Timber Harvest Administration (E07)

1. Use shelterwood and small patchcuts to standards in Regional Plan, NFMA Regulations and visual quality objectives.

1. Regeneration tree cut mixed conifers at approximately age 130, final removal at age 181. Cuttings subject to visual guidelines in 2.41(A03) of this prescription.
2. Pine shelterwood cut at approximately age 130, final removal at age etc.
3. Shelterwood cut or patchcut using appropriate special yield tables.

Intermediate Harvest -

1. Harvest at intervals called for in the special yield table. Favor trees which will develop old growth characteristics.
2. Salvage as compatible with emphasis objective.

1. Commercial thinning sales.

Logging Systems -

1. Use the most economical methods which are compatible with landform, soil and water quality standards, silvicultural needs and visual resource objectives.

1. Salvage Sales.

				ST-3, 5 of 7, 2/15/82
		Nursery Management (E08)	<ol style="list-style-type: none"> 1. Collect seed in sufficient quantities to meet program reforestation needs and a sufficient reserve for fire and other natural disasters. 	<ol style="list-style-type: none"> 1. Cone collection. 2. Seed certification.
		Genetic Tree Improvement (E04)	<ol style="list-style-type: none"> 1. Implement the Forest Tree Improvement Program. 	<ol style="list-style-type: none"> 1. Select and maintain superior trees. 2. Seed collection from superior trees.
2.46	WATER	Water Resource Monitoring (F03)	<ol style="list-style-type: none"> 1. Silvicultural activities shall consider those practices set down in the Best Management Practices Guidelines to reduce erosion and maintain water quality standards. 	
2.47	MINERAL & GEOLOGY	Mining Law Administration (G01)	<ol style="list-style-type: none"> 1. Withdrawals will be made only when necessary to meet the prescription goal. 2. Develop mitigation alternatives in operating plan approval phase for nonwithdrawn area. 	
		Mineral Leasing (G02-G04)	<ol style="list-style-type: none"> 1. Use standard and special stipulations in leasing actions adequate to protect resources. 	
		Mineral Materials (G07)	<ol style="list-style-type: none"> 1. Recognize rockhounding and other recreation mining. 2. Designate recreation mining areas. 3. Allow mineral material sites when compatible with the goal. 	
		Mineral Character, Withdrawals (G10)	<ol style="list-style-type: none"> 1. Initiate withdrawal within the corridor when needed to accomplish goal. 	
2.48	HUMAN & COMMUNITY DEVELOPMENT	No Special Practices.		

2.51 LANDS

Special Use Management
Non-Rec (J01)

1. Issue permits only for uses compatible with the prescription.
2. Terminate or conform noncompatible uses on an opportunity basis.

Right-of-way Grants for
Roads and Trails (J02)

1. Grant requests when no other access is available.

Federal Energy Regulatory
Commission Licenses &
Permits (J03)

1. Recommend permits be issued for compatible uses.

Property Boundary Location
and Maintenance (J06, J07)

1. Survey, mark and post all National Forest property lines.

Land Ownership Planning/
Land Classification (J11)

1. Make needed land adjustments.

Land Exchange (J13)
Land Acquisition (J15)

1. Use either land exchange or land acquisition to acquire other ownerships as needed.

Rights-of-way Acquisition
(J18)

1. Acquire necessary road, trail, etc., right-of-way.

Rights-of-way Cost
Share (J19)

1. Where applicable, use cost-share process to identify road location and standards compatible with the goal.

2.52 SOILS

Soil Resource Improve-
ment (K05)

1. Rehabilitate degraded sites.

Soil Resource Improvement
Maintenance (K06)

1. Provide maintenance as needed.

2.53 FACILITIES

Local Road Construction
(L12)

1. Follow guidelines in FSM 2304.1a Chapter 4 "Reducing the Visual Impact of Roads."

2.54 PROTECTION

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| Fire Prevention (P02) | 1. Utilize a high intensity prevention effort. |
| Fire Suppression (P08, P09) | 1. Utilize suppression strategies and tactics to meet visual objectives and minimize damage to landscapes.
2. Use the "Containment" Fire Management strategy. |
| Treatment of Activity Fuels (P11) | 1. Treat fuels by rearrangement, burning in place and/or utilization off-site. Where appropriate, utilize fire intensity level to meet activity objectives. |
| Treatment of Natural Fuels (P12) | 1. Natural fuel treatment is appropriate. |
| Fuelbreak Construction (P13) | 1. Compatible fuelbreaks are appropriate. |
| Vegetation Treated by Burning (P15) | 1. Use prescribed fire where appropriate. Low intensity fire is preferred. |
| Insect and Disease Management - Suppression (P35) | 1. Suppress insects and diseases when outbreaks threaten managed resources and/or users. Use suppression methods that minimize site disturbance. Use IPM to select suppression strategies. |
| Insect and Disease Management - Prevention (P39) | 1. Utilize IPM strategies to prevent unacceptable pest damage and meet resource objectives. |